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September 20, 2013

Mr. Jon Rinehart  
On-Scene Coordinator  
U.S. Environmental Protection Agency  
1445 Ross Avenue  
Dallas, Texas 75202

**RE: Johnny M Mine Site Investigation Report; CERCLA Docket No. 06-11-12**

Dear Mr. Rinehart,

On behalf of Hecla Limited and New Mexico Land, LLC, Environmental Restoration Group Inc. is submitting this Site Investigation Report (SIR) for the Johnny M Mine and Adjacent Properties. This submittal is pursuant to Paragraph 39 of the Settlement Agreement and Administrative Order on Consent for Removal Action, dated August 16, 2012, between Hecla Limited and New Mexico Land, LLC; and the U.S. Environmental Protection Agency.

The following table summarizes EPA comments on the Draft SIR and provides responses, including changes to the SIR where appropriate. The appendices included in the Draft SIR have not been changed, with the exception of Appendix I which has been eliminated, and should be considered part of this SIR. Therefore, no appendices are included in this transmittal.

Should you have any questions regarding the SIR, please feel free to contact me at 505-298-4224.

Sincerely,

A handwritten signature in dark ink that reads "Michael Schierman". The signature is fluid and cursive, with the first name "Michael" and last name "Schierman" clearly legible.

Michael Schierman, CHP  
Senior Health Physicist

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Comment No.	Section(s)	Page #	Comment/Edit	Response
1-General	ES	NA	<p>Hecla and NML have made concluding statements in the draft SI Report that "mine-related materials in the project area are not impacting surface water or ground water quality on or downgradient from the project area." These conclusions are based on an analysis of ground water conditions at the former Johnny M Mine site (Site) by Itasca Denver, Inc. (Itasca) that has been included as Appendix I of the draft SI Report. Itasca states in Appendix I that it was directed to evaluate if ground water quality of the former domestic water wells in the Project Area or other ground water resources had been affected by mining-related activity in the Project Area or the presence of backfilled tailing sand in the underground workings.</p> <p>A ground water investigation was not part of the scope of the SI nor was ground water sampling included in the SAP. Therefore, EPA declines to approve or disapprove Appendix I. However, EPA does not object to the inclusion of the data in the SI Report. Additionally, Hecla shall insert a heading or note on this ground water report that states the following:</p> <p><i>"EPA has declined to approve or disapprove this ground water report because it was not within the scope of the</i></p>	<p>We have removed Appendix I and text regarding the Itasca report from the SIR. Per EPA's (letter dated September 5, 2013), groundwater conditions at the site will be addressed in the EE/CA to support remedy alternative development. .</p> <p>The requested insert-<i>"EPA has declined to approve or disapprove this ground water report because it was not within the scope of the Site Investigation approved by EPA."</i>- therefore, is not applicable and has not been added to the SIR.</p> <p>We have removed the following bullet point from the Executive Summary and Conclusions from the SIR: "Mine-related materials in the project area are not impacting surface water or groundwater quality on or downgradient from the project area. Groundwater at the uninhabited residence on Area C is upgradient of the mine.</p> <p>We have removed the third paragraph of Section 2.0 from the SIR.</p> <p>We have removed the following paragraph from Section 4.2.1: "Potential groundwater and surface-water quality impacts associated with mine-related material present in the project area and historic operations were evaluated by</p>

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			<i>Site Investigation approved by EPA."</i>	others (Itasca, 2013). The results of this evaluation are contained in Appendix I."
2-General	Multiple	NA	The boundary of the Project Area is not well defined on maps provided in the draft SI Report as additional samples were collected to the west of Area C along the primary arroyo during the field investigation. Area C needs to be expanded on all appropriate maps to include the area in Section 13 where soil samples AC-20, AC-21 and AC-22 were collected as well as the area defined by the colors or shapes depicted on Figures 4-4, 4-18, 4-31 and 4-32.	The project area has been modified on relevant figures in the final report.
3-General	Multiple	NA	The soil cleanup value will be 3.5 pCi/g, which is inclusive of the background. This is a CERCLA cleanup and not a Uranium Mill Tailings Control Act (UMTRCA) Site. During the negotiation of the agreed order Hecla stated there was no 11e (2) mill tailings on the site.	<p>The radium-226 number of five pCi/g plus background was used in the SIR as a criterion to present the conservatively lower end of the range of volume estimates. We have added a volume estimate for cleanup to 3.5 pCi/g of radium-226.</p> <p>The cleanup standards for the project area will be addressed in the EE/CA in light of the response action alternatives selected for evaluation and reasonably anticipated land uses in the project area. Assigning a cleanup standard in the SIR based on any particular land use scenario is premature. Any cleanup standard based on the selected remedy will be consistent with EPA's <math>10^{-6}</math> to <math>10^{-4}</math> acceptable risk range.</p>

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4-General	Multiple	NA	The field techniques and data evaluation methods applied throughout the report are appropriate. In general, this report provides a technically supportable basis for developing an EE/CA for the Site and planning site remediation. It is important to note that volume estimates in the draft SI Report, though carefully calculated and technically justified, should not represent the basis for actual remediation and implementation of the cleanup standards should be determined through direct measurement of radium concentrations in residual soil when remediation commences.	No change has been made to the SIR in response to this comment.

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5-General	Multiple	NA	<p>Background Reference Area- Selection of the BRA is an important part of the draft SI Report. The selected location is upgradient from the areas of mine activities, which minimizes potential mine influenced contamination from surface runoff. However, it is not far from the previously active mine areas and the underground mine operations were located in the general direction of the background area. Also, the background location includes a large area, estimated to be about one-tenth of the section, which is significantly larger than used for our EPA property assessments, and larger than typically used for MARSSIM cleanup projects in our experience. The soil concentrations measured in the BRA concur with background concentrations determined for the property assessments. The gamma count rates and exposure rates in the BRA were similar to those obtained for the property assessments, but the upper limit values ranged slightly higher than for our background areas.</p>	<p>We surveyed and sampled the proposed Background Reference Area because it was 1) upgradient and far enough away from the operational areas to be un-impacted by mine-related materials; and 2) soil types therein are similar to the majority of those observed in Area C. The background reference areas selected by the EPA were, in our opinion, too close to and potentially downgradient of the operational areas.</p> <p>We agree that the size of the BRA in the SIR exceeds that typically used in MARSSIM-guided cleanup projects. However, we believe it is broadly representative of un-impacted site conditions. We believe that the measurements obtained in the larger area better depict un-impacted site conditions.</p> <p>No change has been made to the SIR in response to this comment.</p>

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1-Specific	Section 1.4.4 Man-Made Features	3	Describe all the wells at the Site, including the two private drinking water wells at the former Jackson property (GMD-04 and GMD-05) as well as the shallow alluvial monitoring wells GW-7, GW-8, GW-8a and GW-9. Also describe the depths of the wells, formations pumped or monitored. Refer to the appropriate map in the draft SI Report which shows each well location. If they are not shown on a Site map, please revise a Site map to show the locations.	<p>Much of this information was included in the ITASCA report (Appendix I), which has been removed from the SIR. Per EPA's letter dated September 5, 2013, groundwater conditions at the site will be addressed in the EE/CA.</p> <p>No change has been made to the SIR in response to this comment</p>

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1-Specific	Section 1.4.5 Operational History	3	<p>The description of the operational history is inadequate with respect to mine water discharges. A thorough discussion is needed of mine water management from the beginning of mine development through the operational phase of mining, including mine water discharges, volumes, and pathway of drainage from the mine prior to construction of the pipeline and the sedimentation basins and water treatment. Please include a description, as well as supporting documentation, of the following:</p> <ul style="list-style-type: none"> <li>• Start of mine dewatering and discharge operations, including year such operations started and ceased;</li> <li>• Pumping rates and volumes of mine water discharged throughout the duration of mining operations and the mine development period, including volumes of mine water discharged prior to start of water treatment;</li> <li>• Year treatment of mine water commenced;</li> <li>• Year sedimentation ponds were constructed and operational;</li> <li>• All permits obtained for water treatment and discharge;</li> </ul>	<p>We have included a more detailed discussion of the operational history of the mine, including mine water discharges and pond construction, in Section 1.4.5.</p> <p>We have added the discharge ditch and pipeline to Figure 3-1.</p> <p>This discussion was not included as an appendix to the SIR as requested since it could easily be added to the body of the SIR. References in the discussion will be provided as separate documents.</p>

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1-Specific	Section 1.4.5 Operational History (concluded)	3	<ul style="list-style-type: none"> <li>Pathway for flow of mine water discharges from the discharge point, along the primary arroyo before and after pipeline construction to the entry point(s) at San Mateo Creek; include a map showing all pathways in plan view, the sedimentation ponds and San Mateo Creek and the years such pathways were used.</li> </ul> <p>The supporting documentation shall be included as an appendix.</p>	
2-Specific	Section 2.1 Scope of Activities, paragraph 3:	4	<p>Revise the paragraph to first state that a ground water investigation was not performed as part of the SI and no conclusions are made on the potential impacts to ground water from the historic mining operations, including the mine water discharge operations. Also state that the evaluation of ground water and surface water conditions in the Project Area were conducted solely to support the preparation of the EE/CA.</p>	See our response to General Comment 1.

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3-Specific	Section 4.1.3.4 Summary of Down-hole Gamma Count Rates, Area C, paragraph 2:	19	The first two sentences of the paragraph read as follows: <i>"Table 4-12 lists findings for each Area C boring. Count rates were below, or essentially reached either one of the two cutoff values in all of the Area C borings "</i> However, count rates measured for all sampling locations in Area C exceeded the mean + 2 standard deviation cutoff value of 5,211 counts per minute for the 1-inch by 1-inch detector. Further, out of 23 sampling locations, the gamma count rate exceeded the 23,546 counts per minute cutoff value of the 2 inch by 2 inch detector 21 times for the maximum and 19 times for the mean. Please revise the sentence accordingly.	Given that Table 4-12 indicates which borings were assessed with a 2-in. by 2-in. or 1-in. by 1-in. sodium iodide detector, the following text replaces the second sentence:  <i>"Count rates were below, or essentially reached their respective cutoff value, in all of the Area C borings. That is; downhole count rates obtained using the 2-in. by 2-in sodium iodide detector were compared to the 23,546 count per minute cutoff value. Those measured using the 1-in. by 1-in sodium iodide detector were compared to the 5,211 count per minute cutoff value."</i>
4-Specific	Section 4.2.1 Geotechnical, paragraph 1	21	Delete the first complete paragraph on page 21 regarding Itasca's assessment of ground water impacts ( <i>see</i> General Comment No. 1 above).	See our response to General Comment 1.
5-Specific	Section 4.2.2.1 Radionuclides, Area B Samples, paragraph 1	23	The reference to Table 4-27 should be Table 4-17. Please revise.	The table number has been revised.

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6-Specific	Section 4.2.2.1 Radionuclides, Area B Samples, paragraph 3	23	<p>Include at the end of the paragraph the following statement:</p> <p><i>"However, it is noted that no soil or sediment sampling of the primary arroyo was performed within Area B. "</i></p> <p>Also, because sampling of the primary arroyo was not performed in Area B, it shall be assumed that the concentrations of constituents with the arroyo are similar to those of the nearest arroyo samples collected in Area C for estimating volumes areas of contaminated soil and sediment. Please revise such calculations in the draft SI Report according.</p>	<p>We have included the following sentence at the end of the paragraph.</p> <p><i>"Soils in the primary arroyo were not sampled in Area B."</i></p> <p>We have revised the volume estimate in response to this the comment. The depth of contamination assumed in Shape 12 (the Primary Arroyo in Area B) in Table 4-24 was changed from 0.58 meters (depth to background) and 0.4 meters (depth to background plus 5 pCi/g radium-226) to 1.7 and 1.45 meters (the depths of contamination in Boring AC-06), respectively. The depth of 1.45 meters also was adopted for the 3.5 pCi<sup>-1</sup> concentration as a response to the recommendations in item 2 of an EPA letter to Hecla Limited dated September 5, 2013.</p>
7-Specific	Section 5 Conclusions, fifth bullet	31	<p>As discussed in General Comment No. 1, above, the ground water report (Appendix I) was not within the scope of the SI and EPA is declining to approve or disapprove it. Therefore, please delete the entire bullet statement.</p>	<p>Please refer to our response to General Comment 1.</p>

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8-Specific	Figure 3-1 1977 Historical Aerial Photo with Site Features	NA	The historical aerial photo does not depict the entire Project Area. Please include an additional figure that shows the 1977 photo covering all of Areas A, B, and C as well as the area west of Area C as far south as San Mateo Creek (i.e., the area shown on Figure 3-4). This figure will show the location of the arroyos and other drainage features during the time of operation. Also include a current aerial photo of the same area without the color overlays depicting Areas 'A, B and C so that a comparison of the 1977 and current surface drainage features can be made.	Figure 3-4 has been revised to bound the project area.  The requested aerial photo (year of 1977) has been included.
9-Specific	Figure 4-2 Geomorphological Characterization of Arroyos in Project Area	NA	The Project Area is much larger than the area depicted on Figure 4-2. It is important to show in map view the entire extent of the drainage features (arroyos) that conveyed discharged mine water to San Mateo Creek as well as the points of entry along the creek for the mine water. It will also allow comparison of the alignment of the arroyos to the predicted gamma exposure rates for the entire Project Area shown in Figure 4-4 and identification of any correlation between the arroyos and elevated radiation levels extending into Area C and west of Area C. Please expand this figure to show arroyos throughout Area B, Area C and the area of Section 13 west of Area C to where the arroyos meet San Mateo Creek.	Figure 4-3 was added to show the drainage features in and near the project area. Discussion supporting Figure 4-3 was added to Section 4.1.2

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Comment 2 of EPA letter to HECLA Limited Dated September 5, 2013			Response: Any contemplated mitigative actions (non-time critical removal) for the Johnny M Mine site (Site) will be subject to the CERCLA risk-based preliminary remediation goal of $1 \times 10^{-4}$ lifetime cancer risk or approximately 3.5 pCi/g Ra-226, inclusive of background. This risk-based clean-up level and associated equivalencies are outlined and discussed in detail in OSWER Directive 9200.4-18 dated August 22, 1997. Further, there were some erroneous assumptions made about the use of this directive and the applicability of using UMTRCA clean-up standards as ARARs on calculating volume estimates for this Site. This directive states plainly that UMTRCA regulations can only be applied to UMTRCA sites, and at best the UMTRCA regulations can be viewed as relevant and appropriate requirements (RAR) on UMTRCA-like sites. As agreed and stipulated in the AOC between Hecla and EPA 6, this is not an UMCTRA or UMCTRA-likeSite rendering this a moot point. The volumes of soil will need to be recalculated using the aforementioned CERCLA cleanup level.	<p>The radium-226 number of five pCi/g plus background was used in the SIR as a criterion to present the conservatively lower end of the range of volume estimates. We have added a volume estimate for cleanup to 3.5 pCi/g radium-226.</p> <p>The cleanup standards for the project area will be addressed in the EE/CA in light of the response action alternatives selected for evaluation and reasonably anticipated land uses in the project area. Assigning a cleanup standard in the SIR based on any particular land use scenario is premature. Any cleanup standard based on the selected remedy will be consistent with EPA's <math>10^{-6}</math> to <math>10^{-4}</math> acceptable risk range.</p>